Letter from the Desk of David Challinor
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Humans are becoming increasingly urban as reflected in the extraordinary expansion of the world's major cities. Many relatively prosperous city dwellers have a romantic, albeit distorted, image of rural life and fail to grasp the lure of urban living. Those who have lived in isolated rural communities, however, appreciate the strong cultural attraction of cities, where it is perceived the "action" is. But the frenetic lifestyle enjoyed by prosperous city dwellers represents only a fraction of the urban mass, many of whom live in abject poverty exceeding that of even the poorest rural communities. To mitigate the stress of urban life, many cities maintain green oases of vastly varying size for the benefit of their citizens. Municipal officials and volunteer groups continually improve the ambiance and accessibility of these green spaces. Even without human interference, however, urban greenswards continually change over time. This month's letter will consider these oases—how they benefit local people and how wildlife exploits them.

City parks are the clearest examples of urban greenery, although their size and frequency vary inordinately. New York City is certainly blest with many parks. The early city planning that reserved space for Central Park was indeed fortuitous. When initially laid out, it was relatively treeless and full of outcroppings of glacially smoothed Manhattan schist (a soft-layered metamorphic rock). Thanks to the landscape designs of Frederick Law Olmsted, Central Park soon developed its characteristic areas: the Mall for band concerts and ideal for roller skating, Pilgrim Hill for sledding, the Rambles for bird-watching, and the Great Meadow for rallies and rock concerts, although I understand permits are now limited because of damage to the lawn grass.

Central Park has a special affinity for me because at the turn of the last century my maternal grandfather was Park Commissioner (then an unpaid political appointment). The family story is that he got in hot water with his political opponents for cutting an entrance through the stone wall that rings the park on Fifth Avenue at 68th Street to facilitate entrance to the park for his eleven children who lived only a block away. He also tried to keep the grass on the Great Meadow clipped by buying a flock of sheep to graze there instead of using the cumbersome horse-drawn gang mowers. According to my mother, the experiment was unsuccessful because he had to have a full-time shepherd and dog to keep the sheep confined to the Great Meadow. Another major landscape change occurred about 40 years after my grandfather's tenure when the large reservoir being built in the middle of the park was filled, displacing the shacks of the unemployed who lived at the bottom of the empty lake in what was then known as "Hooverville."

The wildlife in all the city parks has also changed remarkably. A coyote showed up a year or so ago in Central Park, having evidently trotted across the busy Tappan Zee

Bridge from the Bronx at Manhattan's northern tip. The Bronx's Van Courtland Park is as large as Central Park and now supports a resident coyote population as well as a deer herd. An unanticipated example of an urban wildlife interaction occurred in Chicago where a coyote was photographed at night with a Canada goose egg in its mouth. Authorities had been baffled by a sudden decrease in the number of goslings during the past spring after a population explosion of these geese in all the urban parks. The wily coyotes had learned to raid the nests of brooding geese so successfully that the population growth rate of Canada geese plunged to one percent from its former rate of about five percent per year.

Central Park's resident pair of red-tailed hawks attracted national attention when their nest was removed from the cornice of a Fifth Avenue apartment by the apartment's co-op board. The hue and cry was so great that the nest was restored and fortunately reoccupied. It would have been undreamed of in my childhood for a red-tailed hawk pair to nest at the edge of Central Park.

Raptors have indeed become city birds and the best known example are peregrine falcons. This cliff-nesting bird became extinct along the East Coast in the 1960's because of the chemical effect of DDT (the famous WWII insecticide) on the calcium metabolism of peregrine females. Eggshells were so thin that they collapsed when brooded. Severe restrictions on its use resulted in the recovery of bald eagles and brown pelicans, but the non-migratory eastern peregrine population was extirpated. A 25-year effort of captive breeding and release has successfully restored peregrines to the point where there are 16 nesting pairs in New York City alone. Most of the city's major suspension bridges harbor a peregrine scrape (nest). Pigeons are their major prey, particularly homing pigeons, because they generally fly higher than park pigeons and are more vulnerable to stooping (when the peregrine partially closes its wings and dives almost vertically on its prey, striking it with its curled talons and, by adroit turning, catches the falling bird in mid air).

Although peregrines are thriving in eastern cities, Cooper's hawks in Tucson pay a price in consuming their principal prey—city pigeons. When compared to their rural conspecifics, city hawks lay larger clutches, but their young suffer higher mortality before fledging than rural birds, evidently because so many city pigeons harbor pathogens lethal to these young hawks. Tucson also has a resident bobcat population on the north side of town where upscale housing encroaches on the mountain foothills. Returning after dinner to a house where I was visiting, my hostess predicted that a bobcat would be waiting on her back lawn. I was skeptical, but there a bobcat calmly sat even in the glare of the house's flood lights until thrown a piece of raw hamburger. It carefully ate the meat before leaping over the back wall and disappearing in the darkness. Such cats, of course, should not be fed; by luring a bobcat to the area, neighboring households could lose domestic cats and small dogs to the "intruder." In turn, a bobcat risks being trapped or shot for its depredations.

The National Zoological Park's environment has also changed over time. When opened in 1890, old photographs show it virtually treeless. Hay fields occupied much of

the open space, which fueled the city's livery business. The past century has witnessed its return to a typical hardwood forest populated with resident deer, fox, raccoon and possum. Near the Zoo's bird house is a seasonal nesting colony of black-crowned night herons that occupy about 200 fragile stick nests high in the oaks and tulip poplars that surround the ponds of the Zoo's waterfowl collection. In winter, Zoo staff try to remove as many of the nests as possible that overhang the paths, which can turn white from excreta overhead. At the height of the nesting season in late May, foxes, skunks and other mammal denizens exploit the bounty (eggs and nestlings) that drop from the flimsy nests during wind storms.

Wildlife in an urban zoo does have its downside. Every five or six years, for example, rabies comes up from the south and infects our resident raccoons and foxes. Much effort is then spent protecting susceptible Zoo animals from this often lethal disease. Such an assault happened two years ago when the Zoo's wild crow population was decimated by the rampaging West Nile virus, which resulted in its lethal transmission to a half-dozen flamingo chicks. Wild mallards and wood ducks crowd our waterfowl ponds in winter, which requires emptying and cleaning each pond regularly to avoid the risk of botulism infecting our waterfowl collections. Finally, the Zoo no longer keeps reindeer (caribou) that for many years participated in the national Christmas display on the Ellipse just south of the White House. After one or two caribou died, we learned to our dismay that they are particularly susceptible to a brain worm commonly found in white-tailed deer, which are resistant to them. To keep our animal collection healthy we must be ever wary of disease transmission not only from local wildlife, but from straying domestic dogs and cats.

Golf courses, too, are prime examples of urban oases, particularly older ones that have become surrounded by expanding cities. As evidence of their importance for wildlife, the Summer 2005 issue of *The Wildlife Society Bulletin* published ten papers under the title "Can golf courses enhance bird conservation?" The articles considered the courses as habitats for bluebirds, waterfowl, red-headed woodpeckers and burrowing owls. The answer to the question posed is generally "yes," but course management policies had a profound effect on bird populations, especially the use of chemical pesticides and herbicides on fairways and greens. Interestingly, the course proprietors were all cooperative and helpful to the research reported in this issue and supported the goals of enhancing nesting habitats.

Another urban oasis worth considering is a city cemetery, of which my favorite is Cambridge's (MA) Mt. Auburn Cemetery. Over the years, it has been beautifully landscaped and maintained; when I was an undergraduate I would bike there with a friend to bird-watch, especially during the spring migration. There I saw my first hermit thrush and scores of warblers that were all new to me. The trend in cemeteries is towards flat, ground-level headstones rather than the elaborate statuary of the past. This allows easier maintenance and a more open park-like ambiance.

Such physical changes in parks, zoos and cemeteries reflect the cultural changes of the visitors. Perhaps in reaction to the hyper development of formerly open fields and

forests surrounding cities, urban citizens appreciate and indeed need access to the oases I have described. Not all of us can work in such an ideal location as I. The view from my office window at the Zoo is of a mature hardwood forest separated from the building by a 50-foot strip of grass frequently used by deer, foxes and other wildlife. Yet the Zoo is completely surrounded by apartments, stores and all the appurtenances of a busy city. Let us continue to support urban oases and do our best to keep them so.

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